Amendments to the Specification:

Page 2, before line 1, insert the following titles and paragraph:

-- **PRIORITY CLAIM**

This is a U.S. national stage of application No. PCT/DE2003/02154, filed on June 28, 2003. Priority is claimed on the following application(s): Country: Europe, Application No.: 02 015 490.2, Filed: July 12, 2002.

BACKGROUND OF THE INVENTION --

Please replace the paragraph beginning on page 2, line 3, with the following rewritten paragraph:

-- The invention relates to a fuel cell stack including a stack of polymer electrolytic membrane fuel cells ~~according to the features specified in the introductory part of claim 1~~. --

Please amend the title on page 2, line 6, as follows:

-- ~~BACKGROUND OF THE INVENTION~~ DESCRIPTION OF THE PRIOR ART --

Please replace the paragraph beginning on page 2, line 8, with the following rewritten paragraph:

-- ~~Such fuel~~ Fuel cell stacks are constructed of fuel cells of the polymer-electrolyte-membrane construction type and consist of several cells arranged into a stack. The basic construction of such cells is known per se, and in this context ~~DE 195 44 323 A1~~ U.S. Patent Nos. 5,998,057; 6,183,898; and ~~DE 199 38 589 A1~~ DE 100 38 589 A1 are referred to. --

Please amend the title on page 3, line 10, as follows:

-- ~~**BRIEF**~~ **SUMMARY OF THE INVENTION** --

Please replace the paragraph beginning on page 3, line 12, with the following rewritten paragraph:

-- ~~Against this background it is the~~ It is an object of the present invention to design a fuel cell stack of the initially mentioned type such that an as uniform as possible temperature distribution within the individual fuel cells and within the fuel cell stack is given, with an as low as possible flow resistance. --

Please replace the paragraph beginning on page 3, line 17, with the following rewritten paragraph:

-- According to the invention, the object is met by a fuel cell stack, including a plurality of fuel cells arranged in a stack, each of the fuel cells being of polymer electrolyte membrane construction, with membrane electrode assemblies respectively arranged between each adjacent pair of fuel cells in the stack. Each of the fuel cells between adjacent membrane electrode assemblies defines a plurality of essentially parallel channels for conducting cooling fluid, each of the channels having two open ends, wherein a direction of flow of one of the channels is opposite to the direction of flow of adjacent ones of the channels in the each of the fuel cells ~~the features specified in claim 1 achieve this object. Advantageous formations of the invention are specified in the dependent claims, the subsequent description as well as the drawings~~. --

Please amend the title on page 6, line 28, as follows:

-- **BRIEF DESCRIPTION OF THE DRAWINGS** --

Please replace the paragraph beginning on page 6, line 30, with the following rewritten paragraph:

-- The invention is described in more detail by way of one embodiment example represented in the drawings. ~~There are shown in~~ In the drawings:

Fig. 1 ~~in a greatly schematized representation,~~ is a partial sectional isometric view of a fuel cell stack according to the invention, with collector channels at the outflow side, and

Fig. 2 ~~in a greatly schematized representation, a section~~ is a schematic sectional view through the cooling channel system of a fuel cell transverse to the axis of the fuel cell stack according to Fig. 1, along the section line II-II in Fig. 1. --

Please replace the paragraph beginning on page 7, line 34, with the following rewritten paragraph:

-- Since the routing of the air (arrows), as described initially, within a fuel cell 2 is designed such that the flow runs in opposite directions in adjacent transverse channels 8 of each fuel cell 2, the outlets of the transverse channels 8 of the fuel cells 2 arranged above one another are connected to one another in a conducting manner by way of collector channels 11 arranged parallel to the stack axis 9, as is evident from Figure 1. The collector channels 11 which in Figure 1 are represented by 5 components which are U-shaped in cross section, may be designed in various manners, as has been explained initially. ~~They~~ The collector channels 11 are designed and arranged such that they connect the outflow sides of the ends of the transverse channels 8 of all fuel cells 2 in a conducting manner, said ends lying above one another in the axial direction 9, but do not affect the inflow sides in each case of channels 8 adjacent to the right and left. The components therefore are designed and arranged such that with an inflow of air of the fuel cell stack from the left and right side seen in ~~the Figure~~ Fig. 2, in each fuel cell 2 in the transverse channels 8, a flow sets in as is represented by way of example in Fig. 2 by way of the cross section through the air channels 8 of a fuel cell 2 (by way of arrow representation). --

Please replace the paragraph beginning on page 8, line 23, with the following amended paragraph:

-- The collector channels represented schematically in Figs. 1 and 2 as a rule are formed on construction of the fuel cell stack 1 in that suitable recesses are formed in the edge region of the components for example 4, 5, 6, 7 or their enclosure at the edge. The enclosure may comprise an elastic sealing edge surrounding a bipolar plate of each of the fuel cells and arranged between adjacent fuel cells, the common collector channel being formed by recesses in the sealing edges lying above one another. The collector channels 11 at the same time are to be

designed such that ~~an as low as possible~~ flow resistance ~~results~~ is minimized. --

Please replace the Abstract with the amended Abstract attached hereto on a separate page.